BOXES

The Great Recession was preceded by a protracted period of high growth accompanied by low and stable inflation. Both factors were widely interpreted as signs that the growth was based on sound economic fundamentals. However, in that period, the indicators of internal and external imbalances such as current account deficits and private-sector borrowing needs experienced sharp increases in many countries, and were considerably up on their historical averages. Although warnings were issued in various quarters about the risks associated with these imbalances,[1] the overriding perception was that the high growth rates would continue over time, which was reflected in the gradual increase in the estimated potential growth rate.

In principle, potential growth is identified with a growth rate that an economy is capable of sustaining with its production factors. Usually, potential growth – and the corresponding output gap – is estimated as output growth compatible with stable inflation, in keeping with the notion of the Phillips curve and the concept of the non-accelerating inflation rate of unemployment (NAIRU). Consequently, in the habitual potential growth estimate the only imbalance considered is related to unemployment which takes the form of inflationary pressures. However, for various reasons – including the credibility gained by central banks in their ability to maintain price stability and the globalisation of economic activity – in recent years inflation has become less closely related to fluctuations in developed economies' activity than in the past as shown in Panel 1. Furthermore, inflation seems to have decoupled from other indicators of external imbalances – such as a very high current account deficit – and of internal imbalances – accelerated growth of credit or of asset prices – with the result that inflation is no longer a sufficient synthesis of other imbalances in the economy.

The limitations of the potential output methodology for adequately approximating the growth that an economy is capable of sustaining are illustrated by certain stylised facts. First, real time potential growth estimates show a significant relationship with various measures of external imbalances (such as the current account balance) and of internal imbalances (for example, with residential investment and private-sector borrowing needs), particularly in the last decade and they are subject to considerable revisions ex-post. Second, the potential growth estimates tend to increase when imbalances are generated and to decrease when they are corrected. Panel 2 shows changes in the current account balances and estimated potential growth, whereas Panel 3 shows the correlation between the two and the correlation of other imbalances with estimated potential growth, a correlation which is significant in all cases in the pre-crisis years.

These considerations indicate the appropriateness of developing growth indicators that take into account the relevant imbalances which have built up. In this vein, an alternative concept of growth adjusted for imbalances, similarly to that of habitual potential growth, is defined as the GDP growth rate which does not widen or generate macroeconomic imbalances, identified in this case through a broad set of indicators and not only inflation. The macroeconomic imbalances considered include the current account balance, the real effective exchange rate and the international investment position as external imbalances, and public and private-sector saving and investment, public and private-sector balances, residential investment and the weight of the non-tradable sector as internal imbalances.[2]

The exercise is performed for certain countries which had high external and private-sector borrowing needs prior to the crisis (United States, United Kingdom and Spain) and for others in the opposite situation (Germany and China), between 1970 and 2011. The results of this approach confirm, on one hand, the significance of external and of institutional sectors' balances as indicators of imbalances and, on the other, the greater stability of growth estimates adjusted for imbalances with respect to potential growth estimates. The most important imbalance indicators are the current account balance and private-sector financing needs, and, in certain cases, public-sector ones. The resulting estimates of adjusted growth are not correlated to the imbalance indicators and consequently, it could be expected that they are subject to lower ex-post revisions than potential growth ones. However, this approach is not free from limitations either and, hence, the results should be interpreted with caution.

Among the results by group of countries, the growth estimates adjusted for imbalances for countries with borrowing needs are lower than the pre-crisis estimates of potential growth, resulting in positive output gaps estimated for that period which are substantially higher, as seen in Panel 4. Conversely, growth adjusted for imbalances declines to a lesser degree than potential growth after the adjustment for external imbalances has been made, as has occurred in most of these countries in the wake of the crisis.

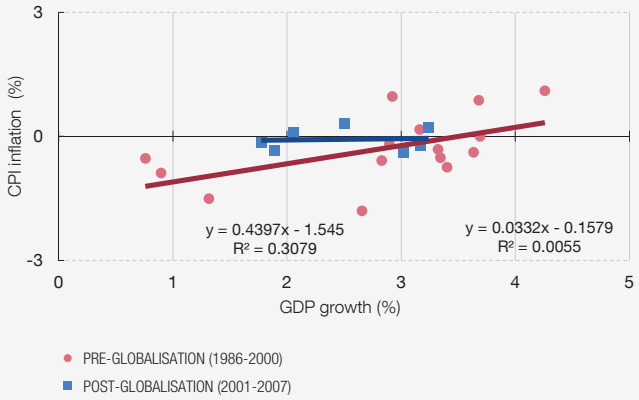
In short, the crisis – its precedents, origin and development – has revealed the limitations of the potential growth methodology for evaluating the capacity for growing sustainedly and the appropriateness of incorporating a wider set of imbalances into the analysis and assessment of the cyclical position of the economy,

1 For instance, the IMF and Bank for International Settlements repeatedly underlined that global financial imbalances represented a risk to the continuity of world growth and vast literature, based on emerging economies, demonstrated that the build-up of imbalances usually led to a crisis. In-house, other papers showed that the imbalances built up by the Spanish economy and its long-term growth outlook were incompatible. See Campa and Gavilán (2006), *Current accounts in the Euro area: an intertemporal approach,* Documentos de Trabajo, No. 0638, Banco de España, and Estrada, Jimeno and Malo de Molina (2009), *The Spanish economy in EMU: the first ten years*, Documentos Ocasionales, No. 0901, Banco de España.

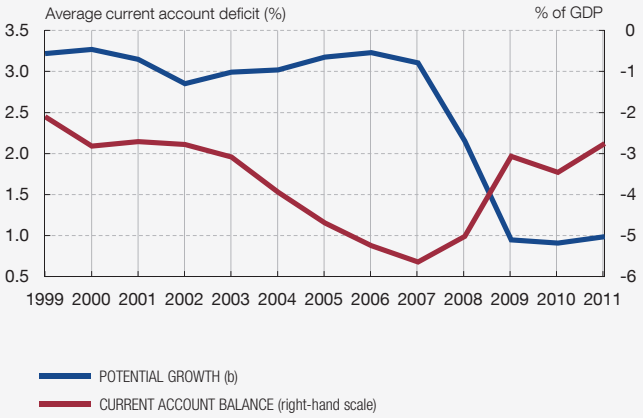
2 For more details see Alberola, Estrada and Santabárbara (2013), *Growth Beyond Imbalances. Sustainable Growth Rates and Output Gap Reassessment*, Banco de España, mimeo.

understood in a broader sense than the business cycle. The development of alternative indicators is a useful device for improving economic policy design, both in the more traditional area of cyclical stabilisation – monetary and fiscal policies – and in the area of other broader policies, such as macroprudential or structural policies.

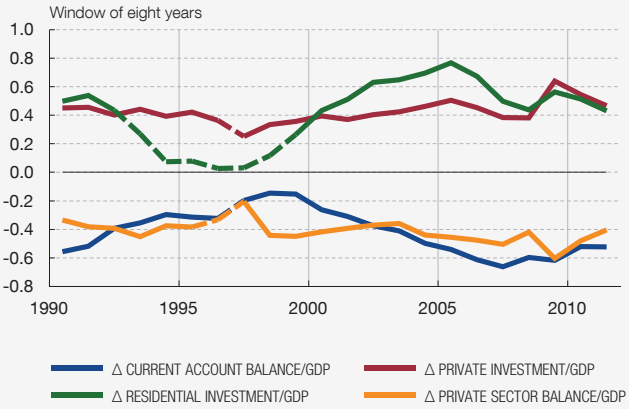
1 GDP GROWTH AND INFLATION IN ADVANCED ECONOMIES (a)



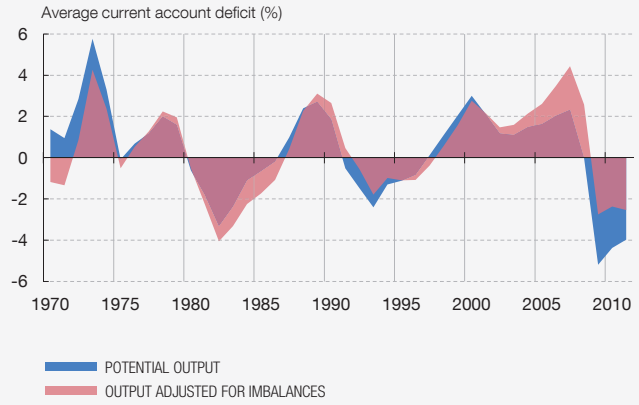
2 POTENTIAL GROWTH AND CURRENT ACCOUNT BALANCE



3 ROLLING CORRELATION BETWEEN POTENTIAL GROWTH AND IMBALANCES (c)



4 OUTPUT GAP BASED ON GROWTH ADJUSTED FOR IMBALANCES AND ON POTENTIAL GROWTH



SOURCES: AMECO, European Commission, IMF and US Congressional Budget Office.

a Average of the advanced economies.
b Potential growth estimated in the reference year.
c The broken line indicates that the correlations are not significant at the 95% confidence interval. Countries included: United States, United Kingdom, Spain and Germany.

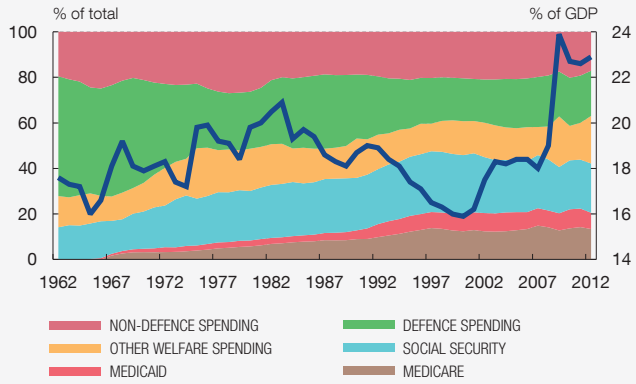
US public finances must address in the medium term the process of an ageing population and the resulting increase in spending on welfare. Additionally, the sharp deterioration of the public balance in the wake of the crisis has brought to the fore the need to provide a lasting solution to this problem. Although this situation is shared, even much more pressingly, with other advanced economies, the political polarisation surrounding this issue makes it particularly important in the US case.

While the fiscal structure of the United States is relatively decentralised in territorial terms,[1] the analysis of public finances at the federal level provides a suitable proxy to this matter. Primary public spending of the federal government can be divided into a discretionary component, which includes defence and non-defence spending and must be approved annually by Congress, and a mandatory component linked to the Social Security programmes, Medicare – healthcare coverage for the elderly – and Medicaid – for individuals with low income and resources or with certain disabilities – among others. In order to change these programmes the law must be specifically amended or repealed. The third component of federal public spending is interest payments, which in 2012 represented 1.4% of GDP (considerably below the average of recent decades), since although public debt is at a peak since the Second World War, the interest rate remains at a historical low.

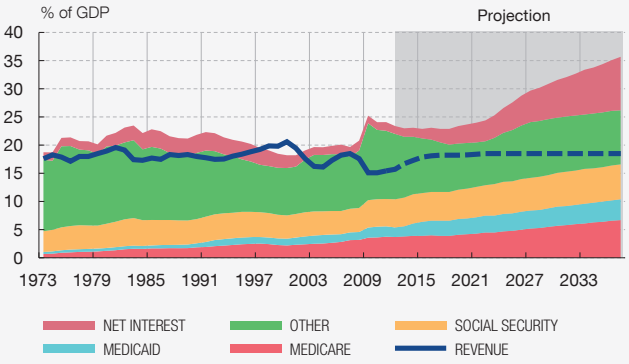
As shown in Panel 1, in the last four decades, mandatory spending has increased from 28% to 63%, as a percentage of the federal government's primary public spending, as a result of demographic trends and the increase in spending on health. Conversely, the weight of the discretionary component has declined,

1 In 2012, federal government spending (22.8% of GDP) accounted for around 58% of total public spending; state and local government spending accounted for the remaining 42%.

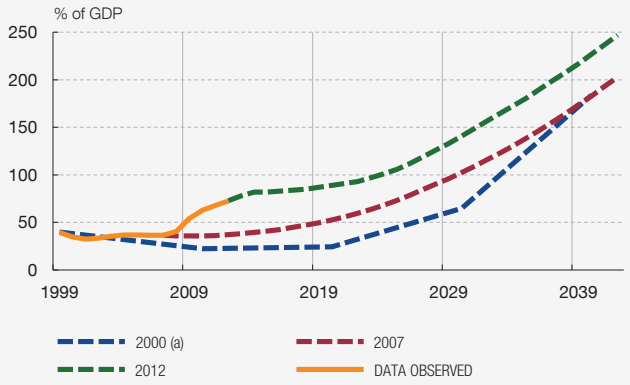
1 PRIMARY PUBLIC SPENDING



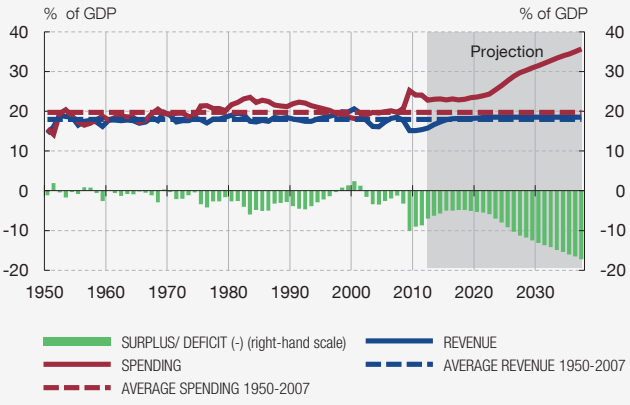
2 SPENDING BY TYPE AND TOTAL REVENUE



3 CHANGES IN AND PROJECTIONS OF FEDERAL GOVERNMENT DEBT HELD BY THE PUBLIC



4 REVENUE, SPENDING AND SURPLUS/DEFICIT (b)



SOURCES: Office of Management and Budget, *The Budget and Economic Outlook: Fiscal Years 2013-2023* (Congressional Budget Office, February 2013) and *The Long-Term Budget Outlooks* (Congressional Budget Office, October 2000, December 2007 and June 2012).

a Under the "Saving no surpluses" scenario.
b Under the Congressional Budget Office's *Extended Alternative Fiscal Scenario*, which includes the assumption that policies in place in the past, but scheduled to expire, are extended in the future.

not only in terms of federal public spending but also as a percentage of GDP and is expected to continue to do so in the future. The baseline scenarios projected under the assumption that current legislation remains the same, which take into account the retirement of the baby-boomers, the increase in life expectancy and the rise in spending on health at higher rates than that of GDP – despite the improvement in recent years – indicate that mandatory spending would increase from around 10.5% of GDP in 2012 to approximately 16.5% in 25 years (see Panel 2)[2] and to almost 20% within 50 years[3].

Although these exercises are subject to notable uncertainty – associated with healthcare spending, migratory flows and economic conditions – the magnitude of the problem is included in the projections of rising budget deficits, despite the gradual decrease expected in discretionary spending. The foregoing, together with growing interest payments would lead government debt held by the public onto an upward path (see Panel 3). Consequently, since the room for manoeuvre in discretionary spending is becoming smaller and smaller, projected budget deficits can only be mitigated by legislative changes reducing welfare benefits or increasing revenue, which in the United Sates are lower than in other developed countries[4]. Accordingly, numerous, notably different, proposals have been presented in recent years with very different redistributive effects and which ultimately reflect the opposing views on the role that the public sector should play in the economy. In their extreme versions, these views can generally be identified with the positions of each of the two major political parties. These differences encapsulate the difficulty of controlling public debt in the medium term.

At the beginning of the millennium, these problems in public finances did not seem imminent (see Panel 4) and debate was focused on the allocation of the projected budget surpluses. In that context, temporary tax cuts were adopted (that were passed in 2001 and 2003, and should have ended in 2010) and there was a change in Medicare (in 2003), which included a programme to subsidise drugs. These regulatory amendments together with the rise in discretionary military spending in Afghanistan and Iraq, led to substantial changes in the projections of the federal government's budget balance and debt (see Panel 3). Furthermore, the crisis and the economic policy decisions adopted to tackle it led to even more important changes in the fiscal outlook after 2008. The large budget deficits recorded, at close to 10% between 2009 and 2011 (see Panel 4) – the highest levels since the Second World War, contributed to doubling public debt in terms of GDP to 72.5% between 2007 and 2012, whereas before the beginning of the crisis it was projected to stand at 37% of GDP in 2012.

The extreme political polarisation of recent years has prevented the conclusion of a bipartisan agreement to establish a path of fiscal consolidation and has given rise to a succession of crises and partial temporary solutions with negative effects on financial markets. Thus, in the debt ceiling crisis of summer 2011 the Budget Control Act (BCA) was approved. This introduced public spending cuts in the subsequent ten years, setting limits on the growth of discretionary spending, and the creation of a bipartisan congressional committee (known as the "Super Committee"), that had to propose a plan to reduce government deficits in the same period. If an agreement was not reached by this committe, as in fact happened, the law envisaged sequestration, a mechanism of automatic discretionary spending cuts for the period 2013-2021, which was activated in March 2013. Also, on 1 January the American Taxpayer Relief Act (ATRA) was approved within the deadline thereby avoiding the so-called "fiscal cliff"[5]. The tax cuts approved at the beginning of the last decade, which had been extended until the end of 2012 as part of the stimulus plan, were consolidated by this legislation for most of the population.

High and rising public debt such as that projected for the United States has serious adverse consequences. The first consequence is the growing weight of debt servicing, a problem which has currently been eased considerably because the backdrop of high risk aversion, that makes government debt a safe-haven asset, and monetary policy actions maintain interest rates at historical lows. Additionally, the crowding out effect on private investment and the notable reduction in the capacity to respond to negative shocks should be mentioned as negative consequences of high and rising public debt. It does not seem likely, however, that in a short-term horizon there will be a loss of investor confidence in US government debt, which would make refinancing difficult and would substantially raise its rates at issue. The fact that there has never been a default in the country's history, the dollar's unique status as a global reserve currency and the consideration of US government debt as the safe-haven asset *par excellence* suggest that the thresholds of the government debt to GDP ratios usually considered as the triggers of a fiscal crisis are higher in the US case. These circumstances buy the United States some time to take a series of unavoidable crucial decisions, although the prevailing political circumstances are not very conducive to a rapid solution.

2 The projections from 2013 onwards are made by an independent agency, the Congressional Budget Office (CBO) under the Extended Alternative Fiscal Scenario, which includes the assumption that the policies in place in the past but scheduled to expire will be extended in the future. For more details see http://www.cbo.gov/publication/43288.

3 For an international comparison of the projected increase in spending on pensions and healthcare, see Chart 2.4 ("Increase in Entitlement Spending, 2011-2030"), in the April 2013 edition of the IMF's Fiscal Monitor. This chart underlines the expected increase in US healthcare spending of more than five points of GDP until 2030.

4 See Statistical Table 3 of the April 2013 edition of the IMF's Fiscal Monitor for a comparison with other advanced economies.

5 The term "fiscal cliff" was coined to refer to the sharp fiscal adjustment envisaged in the absence of an agreement by the two main parties on 31 December 2012. This was the result of a series of temporary stimulus packages and tax cuts (approved over the last ten years) expiring automatically and the implementation of the automatic reduction in public spending (sequestration) established in the Budget Control Act of 2011.

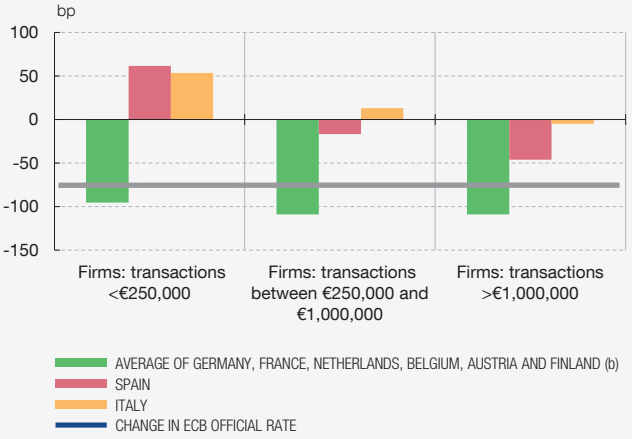
Financial integration is a basic pillar of the common monetary policy because it permits an effective and uniform transmission of the loosening or tightening effect of the central bank's decisions on economic activity to all Member States. When financial markets are integrated, the location of economic agents is no longer a determining factor in the terms of access to financing. In the euro area, although retail banking activity has remained mostly confined within national borders and their cross-border presence has been very limited, the integration that had been achieved in interbank and debt markets was sufficient to ensure, before the crisis, a uniform transmission of the monetary policy stance to the cost of borrowing for households, firms, general government and financial intermediaries throughout the area.

The financial crisis has introduced an essential change in this situation since it has triggered a pronounced fragmentation of the euro area's financial system and has jeopardised the uniqueness of monetary policy. In its initial phase, the crisis affected a fundamental channel for the transmission of monetary policy impulses: the interbank markets which lost their capacity to intermediate liquidity within the euro area. The unconventional measures deployed by the ECB through the provision of ample liquidity led it to replace this function of intermediation and to ease the possible tightening effects on the credit supply.

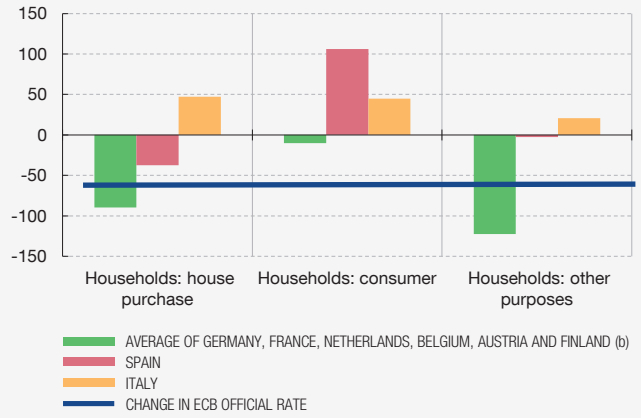
The unfolding of the crisis and its transformation in 2010 into a sovereign debt crisis stepped up the process of market segmentation which, once triggered, created a feed-back loop as a result of sovereign risks, bank risks and economic developments at national level becoming increasingly interconnected (see Panel 1). The issuer's nationality became an essential determinant in the cost and terms of access to financing.

1 CROSS-COUNTRY DISPERSION OF RISK PREMIA (a)

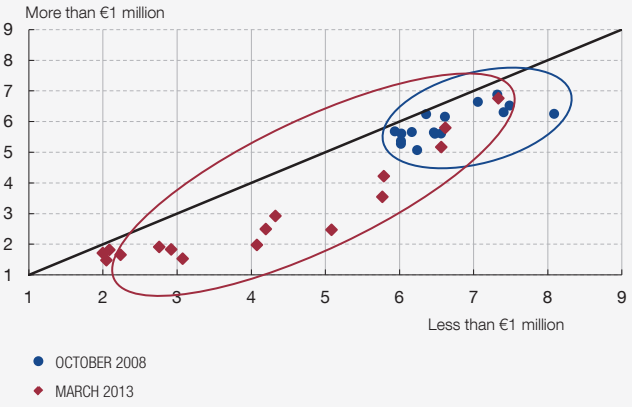
2 BANK RATES ON NEW LOAN TRANSACTIONS. CHANGE BETWEEN JULY 2011 AND MARCH 2013



3 BANK RATES ON NEW LOAN TRANSACTIONS. CHANGE BETWEEN JULY 2011 AND MARCH 2013



4 INTEREST RATE BY COUNTRY. NEW LOAN TRANSACTIONS TO NON-FINANCIAL CORPORATIONS (%)



SOURCE: ECB.

a Standard deviation of five-year credit default swap premia.
b Weighted average by volume of new transactions.

The heterogeneity of the cost of financing across the euro area partly reflected genuine differences in credit risk levels. However, the interest rate spreads reached considerably higher levels than could be determined by economic fundamentals [see, for example, the evidence of the IMF (2012)[1] and D'Agostino and Ehrman (2013)[2] in the case of sovereign debt]. Underlying that, was a crisis of confidence in the euro in which scenarios of the monetary area breaking up were even considered and which conditioned the behaviour of international investors.

All these circumstances prevented a homogeneous transmission of monetary policy impulses through the interest rate channel. As shown in Panels 2 and 3, for example, the reduction of official interest rates by 75 bp between December 2011 and July 2012 fed through in full to the interest rates of new loan contracts in the group of countries least exposed to the financial strains. By contrast, in Italy, the cost of bank loans, irrespective of their purpose, increased, as also occurred in Spain in the case of consumer financing and loans to a sub-sector of non-financial corporations. It is precisely in the area of corporate lending where the divergences in the cost of financing are greatest, as seen in Panel 4. These divergences are especially important in the case of smaller loans since most of them are to SMEs which, unlike large corporations, do not have alternative channels of external financing.

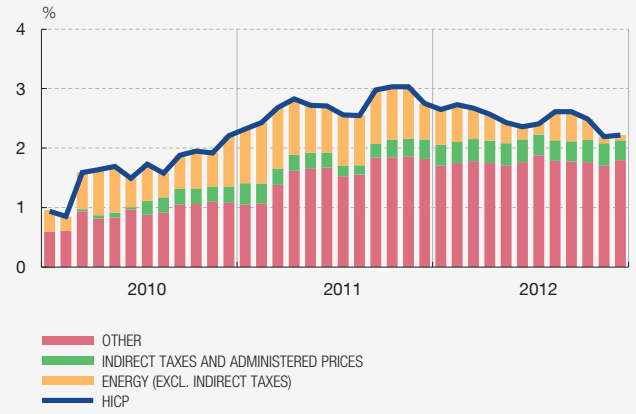
The authorities' response (and, in particular, the introduction by the ECB of additional measures such as the OMT programme) made it possible to rein in and partially correct the trends towards financial fragmentation in the euro area from mid-2012. Recovering a sufficient degree of financial integration is essential for restoring the proper functioning of monetary policy transmission channels. That requires progress on very diverse fronts which, ultimately, permit the euro area to advance towards a genuine economic union.

1 *Global Financial Stability Report*, October 2012, Box 2.2, "Why Are Euro Area Periphery Sovereign Spreads So High?".

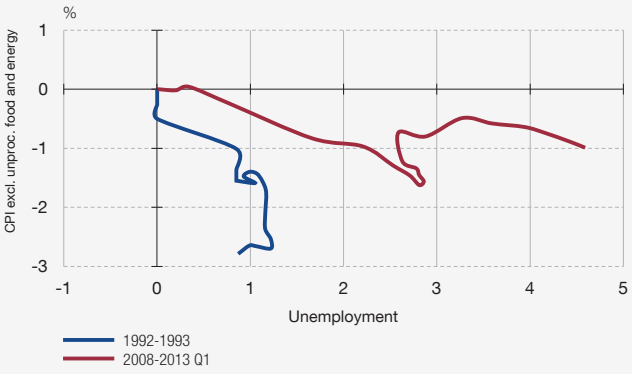
2 *The Pricing of G7 Sovereign Bond Spreads: The Times, They Are A-Changin,* ECB Working Paper No. 1520, March 2013.

Throughout the crisis, and despite the high degree of slack in the economy, euro area inflation has evidenced notable downward stickiness. This was particularly the case in 2011 and 2012, when for many months inflation exceeded 2.5%, driven not only by dearer commodities and the rise in certain indirect taxes, but also by price rises in the other components. More recently, the growth

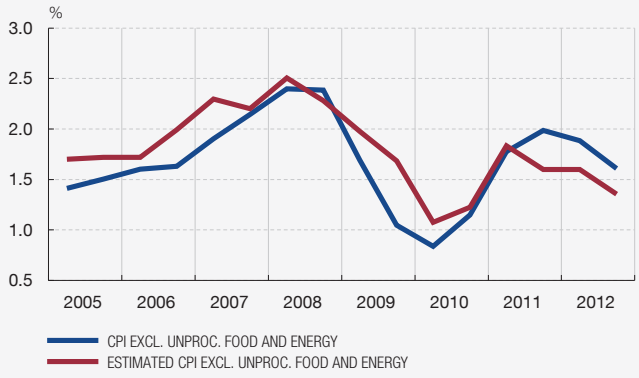
1 CONTRIBUTION OF ENERGY AND INDIRECT TAXES TO THE YEAR-ON-YEAR RATE OF THE HICP



2 INFLATION AND UNEMPLOYMENT IN THE LAST TWO RECESSIONS (a) (Change since the start of the recession, quarterly data)

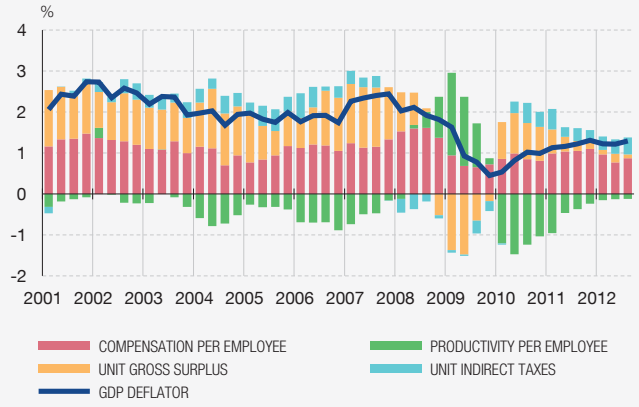


3 INFLATION ESTIMATES BASED ON THE PHILLIPS CURVE

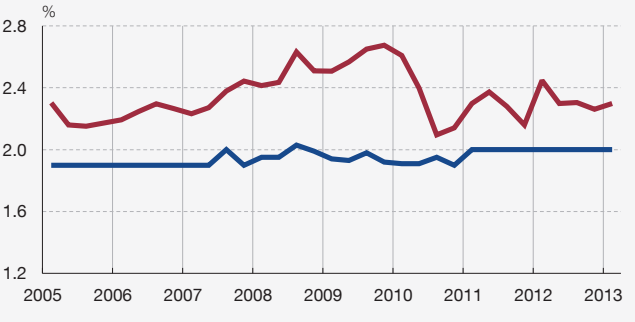


4 OUTPUT GAP ESTIMATES

5 CONTRIBUTIONS TO THE YEAR-ON-YEAR CHANGE IN THE GDP DEFLATOR



6 INDICATORS OF LONG-TERM INFLATION EXPECTATIONS



SOURCES: Eurostat, ECB and Banco de España.

a The inflation rate and unemployment at the start of the 1992-1993 recession stood at 4.11% and 9.63%, respectively, while the related figures for the recession commencing in 2008 were 2.48% and 7.32%.
b Inflation swaps. The level is skewed on the upside owing to the influence of the risk premia.

rate of the HICP has moved onto a declining course, owing essentially to the behaviour of the more volatile components, although the contribution of inflation excluding energy and taxes has not fallen back (see Panel 1).

The scant response by the pace of prices in recent years is in contrast to the previous recession, when modest increases in unemployment were accompanied by sizeable reductions in inflation (see Panel 2). This reluctance of inflation to fall can also be seen when a comparison is made with inflation estimated using a neo-Keynesian Phillips curve, which relates the behaviour of prices to inflation expectations and the economy's degree of slack, and which predicts, from end-2010, increases in prices lower than those observed (see Panel 3). Along these same lines are recent studies that have estimated Phillips curves with time-variant parameters, concluding that the inflation response to changes in cyclical unemployment and to expectations has diminished gradually in recent decades, especially in the advanced economies (i.e. they detect a flattening of the Phillips curve[1]).

There are three leading reasons that may help explain this result: uncertainty over the level of slack in the economy; the significance of nominal price and wage rigidities; and the adoption of clearly defined price stability objectives and the credibility of the developed economies' central banks.

Firstly, mention should be made of the sizeable methodological discrepancy surrounding the measurements drawn up by international organisations on the degree of slack in the euro area economy, at a time of great uncertainty such as the present (see Panel 6). Hence, a lower level of slack, as a result of a lower estimate of potential growth, would help us understand why the downward pressures on prices have been low. The possible structural nature of the increase in unemployment in this crisis, the increase in capital costs and agents' greater risk aversion may be some of the factors justifying a level of potential growth in the euro area lower than that estimated by international organisations and agencies (see Panel 4). But, in turn, in a more globalised environment, inflation developments in the euro area appear to respond increasingly to global determinants, which might help explain their lesser sensitivity to domestic factors.

Secondly, the scant adjustment of prices and wages to changes in the levels of economic slack, known as "nominal rigidities", might also help explain the downward stickiness of inflation in a setting such as the present. Drawing on the decomposition of the GDP deflator, it can be seen that, since the onset of the crisis, there have been substantial changes in the contribution of productivity and of the gross operating surplus, whereas the contribution of compensation per employee has trended much more steadily (see Panel 5). This behaviour by wages, which might be attributable to the presence of nominal rigidities, would help explain the downward stickiness of euro area core inflation. This result is consistent with recent microeconomic evidence, which suggests that wage cuts were infrequent in the euro area at the onset of the crisis.[2]

Finally, the firm anchoring of inflation expectations as a consequence of the improved credibility of monetary institutions in the advanced economies might have contributed to the stability of inflation in recent years and to a lesser response by it to changes in the business cycle. In this situation, economic agents perceive that inflation will hold in the medium term within the target range set by the monetary institution; accordingly, they will have fewer incentives to alter prices and wages. In the case of the euro area, the habitual indicators tend to confirm this more entrenched anchoring of expectations (see Panel 6), while the less volatile components of inflation have tended to stabilise at levels relatively compatible with the definition of price stability governing ECB conduct.

1 See World Economic Outlook (2012), *The dog that didn't bark: Has inflation been muzzled or was it just sleeping?*, International Monetary Fund, chapter 3.

2 See Messina and Rõõm (2010), *Downward Wage Rigidity during the Economic Crisis*, Wage Dynamics Network (ECB), mimeo.

The Spanish general government sector is immersed in what is an unprecedented fiscal consolidation drive in our country. The process has enabled the budget deficit to be cut from 11.2% in 2009 to 7% in 2012 (10.6% if the impact of the support to the financial sector is included). Despite the adjustment made, the public debt/GDP ratio continued increasing, rising to 84.2% of GDP in 2012. This behaviour was habitual in larger-scale consolidation episodes observed in the past in the OECD.[1]

The fiscal adjustment is unfolding in a highly adverse macroeconomic environment, with very low or negative economic growth (which is most singularly affecting national demand), a high rise in unemployment and, following the onset of the euro area sovereign debt crisis, a significant increase in the cost of government debt issues. Against this backdrop, the reduction in the nominal budget deficit as a percentage of GDP does not properly reflect the consolidation drive undertaken. To better approximate this drive, resort is habitually had to measuring it on the basis of the change in the structural primary budget balance. This variable adjusts for the impact of the business cycle on public finances and strips out the effect of changes in the interest burden and of temporary measures, such as public support to the financial sector. According to this measure, the fiscal effort is estimated to have exceeded 6 pp of GDP between 2009 and 2012 (see Panel 1), in contrast to the actual reduction in the budget deficit of only 0.5 pp of GDP over the same period.[2]

Arguably, moreover, the foregoing measure does not reflect the impact of an aspect that is proving particularly significant in Spain: an economic growth composition that is especially "poor" in terms of public revenue-generation, given that the only dynamic factor stems from exports, while national demand continues to undergo heavy reductions. Indeed, the habitual calculations of the impact of the business cycle on public finances are based on the estimation of the cyclical budget balance through the application of output gap elasticities of public revenue (which are assumed to be constant over the course of the cycle). This effect may be approximated by drawing on the analysis of the residuals of the equations for the various public revenue items, defined as that part of their trend that cannot be explained by GDP growth and the effect of the different discretionary tax measures applied. Panel 2 plots the course of these residuals in Spain's case over the period 1998-2012. It can be seen how, in the economic upturn prior to the current crisis, these residuals were constantly positive and on a high scale, which is associated, at least in part, with the positive impact on revenue-raising of the real estate boom and, in general, of the strong growth in assets prices and in corporate profits. From 2007, however, the estimated residuals turned negative, a development related, among other factors, to the decline in domestic demand and, in particular, to the adjustment observed in the real estate sector, as well as to the reduction in companies' profits. In quantitative terms, the positive residuals accumulated during the expansionary phase stood at around 6 pp of GDP between 1995 and 2007, whereas from 2008 their negative cumulative amount would be 5.3 pp of GDP (around 1 pp between 2010 and 2012).

A complementary means of illustrating the impact of the current macroeconomic conditions on fiscal consolidation is through the breakdown of the changes in the public debt ratio into its main determinants (budget deficit, nominal GDP, interest burden and stock-flow adjustments) and comparison with what happened in other budgetary adjustment processes. To this end, Panels 3 and 4 compare the consolidation undertaken in Spain in the 1990s with that currently taking place. Specifically, for the 1990s episode, the trajectory of the public debt ratio is depicted between 1993, the year in which the budget deficit peaked (7.5% of GDP), and 1998, when it stood at 3% of GDP. As to the current consolidation process, and so as to enable a uniform comparison, a simulation is made assuming that the deficit-reduction period that began in 2009 (with a maximum imbalance of 11.2% of GDP) extends to 2013 and 2014, assuming on one hand a deficit of 4.5% in 2013 and a 2.8% in 2014, and, on the other, that nominal GDP will trend over this period as forecast in the Banco de España March 2013 "Spanish Economic Projections Report"[3], adjusted automatically by the impact of the differences between the fiscal forecasts incorporated into this report and that simulated here.[4]

Panel 3 shows there was a reduction in the deficit of 4.5 pp of GDP in the 1993-1998 period. This was enough to stabilise the public debt/GDP ratio and to set it on a declining course. As can be seen in Panel 4, public debt increased by 5 pp of GDP over the period, with a positive contribution resulting from the accumulation of budget deficits of 26 pp, which was offset by a downward effect of 21 pp stemming from nominal GDP growth, which ran at an average rate of 7.2% in that period, while the deficit/debt adjustments, which include – among other factors – the change in financial assets, made a zero contribution to the increase in debt. It should be borne in mind, moreover, that a privatisation programme for public corporations was pursued at that time, allowing revenue for almost 6 pp of GDP to be raised, and that the ongoing deficit reduction was also assisted by a slight decline in the interest burden of close

1 See H. Blöchliger, D. Song and D. Sutherland (2012), *Fiscal Consolidation: Part 4. Case Studies of Large Fiscal Consolidation Episodes,* OECD Economics Department Working Papers 935, OECD.

2 In this calculation, only the support to the financial sector has been taken as a temporary measure. However, some of the measures adopted in 2012, e.g. the suspension of the extra December payment for public-sector employees, have in principle been defined as temporary. If this temporariness were confirmed, or the measures were not replaced by others of an equivalent magnitude, the structural deficit-reduction effort in 2012 would be below the level of 3 pp of GDP included in Panel 1.

3 Banco de España *Economic Bulletin*, March 2013.

4 Indeed, according to the "Spanish Economic Projections Report", the budget deficit would stand at 6% and 5.9%, respectively. In the simulation exercise presented in this box a (downward) adjustment has been made to economic growth derived from the greater fiscal consolidation that would be had meeting the deficit targets of 4.5% and 2.8%, respectively, applying a multiplier of 0.5. Further, the implied interest rate on public debt is assumed to hold at its 2012 level.

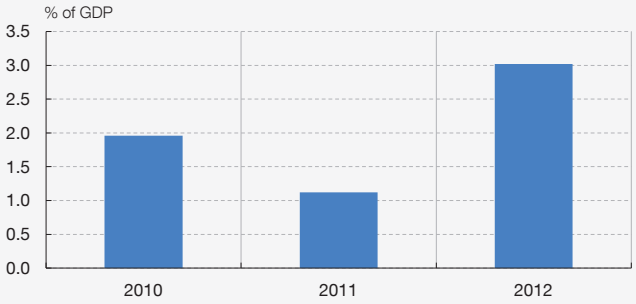
to 0.3 pp and, more significantly, in unemployment benefits, of 1.8 pp of GDP.[5]

In the case of the current consolidation process, and under the simulation made, there would be a reduction in the budget deficit of 8.4 pp of GDP from 2009 to 2014, which would not be capable of stabilising the public debt/GDP ratio over the period.[6] Specifically, the public debt ratio would increase by 40 pp as a result of the budget deficits accumulated (36 pp of GDP) and a likewise

5 The first half of the 1990s saw regulatory changes that tightened benefit-eligibility requirements in respect both of contributory and assistance benefits, which was conducive to the decline in unemployment benefits during the period.

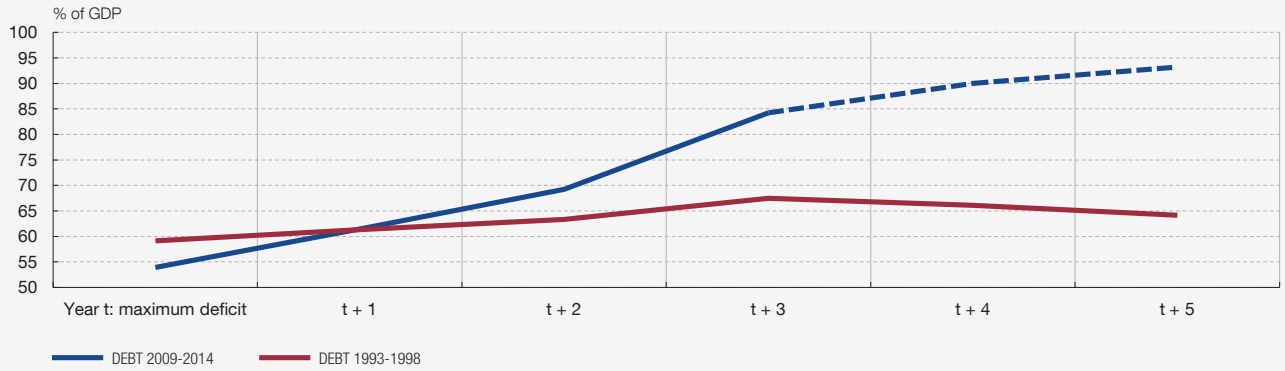
6 At the start of each of the two sub-periods analysed, the public debt/GDP ratio was higher in 1993 (59%) than in 2009 (54%). However, the budget deficit stood at 7.5% of GDP in 1993, significantly below the figure in 2009 (11.2%).

1 CHANGE IN THE CYCLICALLY ADJUSTED PRIMARY BALANCE (excl. support to financial institutions)

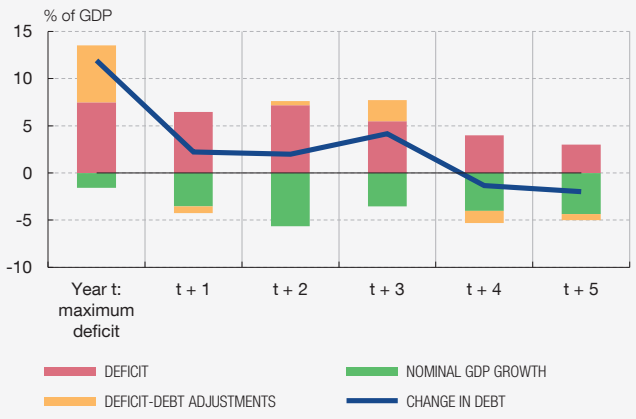


2 "RESIDUALS" OF THE PUBLIC REVENUE EQUATIONS

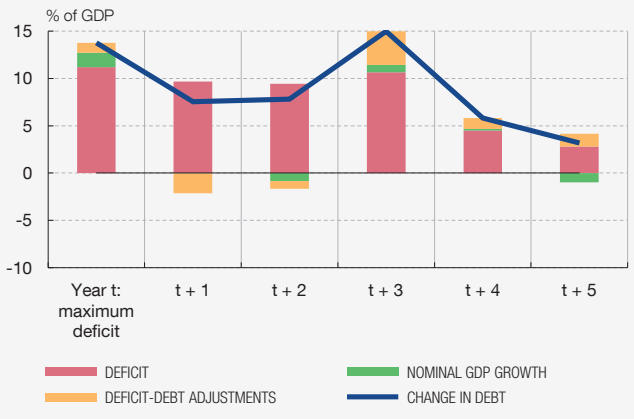
3 THE PATH OF PUBLIC DEBT IN THE CURRENT CONSOLIDATION PROCESS AND IN THAT OF THE SECOND HALF OF THE 1990s



4 DETERMINANTS OF THE CHANGE IN GENERAL GOVERNMENT DEBT. 1993-1998



5 DETERMINANTS OF THE CHANGE IN GENERAL GOVERNMENT DEBT. 2009-2014



SOURCES: IGAE and Banco de España.

positive contribution of nominal GDP, given its weak growth, and of the deficit/debt adjustment of close to 1 pp and 2 pp of GDP, respectively.[7] The interest burden would increase by close to 2 pp of GDP and, given the projected course of the unemployment rate, a significant reduction is not to be expected in unemployment benefits over the period.

In sum, it may be concluded from the foregoing analysis that the required fiscal adjustment to stabilise the public debt/GDP ratio in the current consolidation process must be on a sizable scale, since the prevailing macroeconomic background is particularly adverse.

7 A positive contribution of the deficit/debt adjustment to the increase in the public debt/GDP ratio of 0.5% in 2013 and 2014 is assumed, similar to the annual average observed in the past 10 years.

During the last upturn, the Spanish household saving rate remained stable, fluctuating moderately around values close to 11% of gross disposable income (see Panel 1). The onset of the crisis, however, notably altered the pattern of the household saving rate, which increased by 7.4 pp from 2008 to 2009 up to 17.8% of household income. This rise, which was also seen in other peripheral European economies, such as Portugal and Ireland, gave way from 2010 to a greater moderation in the Spanish household saving rate than that seen in other European economies. Specifically, at end-2012, the Spanish saving rate had fallen by 10 pp from its 2009 level, down to 8.2% of gross disposable income.

This irregular behaviour of the saving rate is indicative of the fact that some of the determinants of Spanish household consumption and saving decisions have exerted an effect of changing intensity and direction during the crisis. Among these determinants are two whose dynamics over the course of these years are particularly significant when it comes to explaining the fluctuations in the saving rate and projecting its future trajectory: household disposable income, and the sensitivity of consumption to changes in households' real spending capacity.

Panel 2 tracks income and its breakdown into consumption and saving. Of note, first, is the fact that, in the period from 2008-2009, nominal household income continued to increase, despite the impact of the financial and economic crisis. A particular contributing factor here was the positive sign of income from general government, through the dual channel of the effect of the automatic stabilisers and of certain discretionary tax measures adopted in 2008 which, overall, countered the negative contribution of employee compensation. This rise in nominal income was essentially assigned to increasing saving, a development that was particularly noticeable during 2009 when nominal consumer spending fell. The strong pace of the downturn in the labour market and, in general, the high aggregate uncertainty that began to become evident in the final stretch of 2008 would account for a substantial portion of the increase in the precautionary saving rate.

From 2010, household income began to diminish under the weight of the continuing forceful job destruction and the onset of fiscal consolidation. Since then, declines in income have been accompanied by sharp falls in funds earmarked for saving and, on the contrary, by increases in household nominal consumption (see Panel 2) which, however, have not sufficed to prevent the declines in real consumption since early 2011. The fact that the weakness of the labour market and, therefore, the uncertainty over future wage income are not clearly lower in this latest phase of the crisis than in its early stages indicates that, although the precautionary reasons that drove saving in 2008 and 2009 have not receded, some other factor operating in the opposite direction has prevailed since 2010, exerting a negative effect on saving.

An initial factor to be taken into account in this respect concerns the role of saving as a stabilising factor of consumption over time. Insofar as agents assess positively a stable consumption path over time, the natural response to negative temporary shocks in their income and wealth levels is to reduce the saving rate. Likewise, the assumption about the presence of downward rigidities (non-linearities) in levels of real consumption, where the latter are already relatively low, in a setting of persistent declines in income, is one of the most plausible explanations for the recent decline in the saving rate. Indeed, the disaggregated information at the household level available in the Household Expenditure Survey reveals that, for households with relatively low levels of income, the propensity to increase saving when there is an increase in income is low, whereas the tendency to reduce it in the face of a decline in income is relatively high (see Panel 4). Thus, inasmuch as a high proportion of Spanish households have seen their income fall in the past three years, their saving rate and, therefore, the aggregate rate for the economy may have shrunk to a disproportionately large extent through a non-symmetrical pattern of behaviour such as that described.

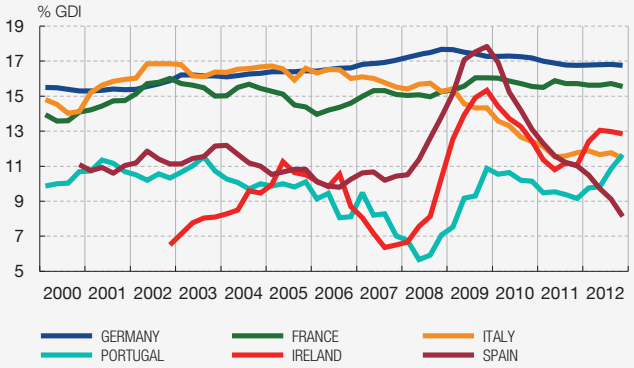
The breakdown of consumption by type of good (durable and non-durable) is also highly illustrative of the possible nature of the downward rigidity in total household consumption. Specifically, the proportion of income earmarked for the consumption of non-durable goods, which normally encompass a greater proportion of essential goods than durables do, has increased continuously since 2010 (see Panel 3). The breakdown of the ratio into spending and non-durable goods and income reveals that the real consumption of these goods has shown oscillations, in both directions, of a limited amount. As a result, the reduction in the saving rate from 2010 is partly the outcome of the sustained increase in the prices of these goods as a consequence of the successive rises seen since then in VAT and in some regulated prices (such as electricity, certain public charges and transport prices). Also contributing to this has been the squeeze on income, which was particularly telling in 2010, following the reversal of some of the reductions in the tax burden that had been adopted in 2008, and in the final stretch of 2012, as a result of the greater wage moderation observed recently and of the elimination of the extra December payment for public-sector employees that year (see Panel 3).

Hence, from the standpoint of consumption, the main factor positively influencing the saving rate in the latest phase of the crisis has been the strong decline in the real consumption of durable goods since the onset of the crisis, with the exception of the temporary rise in the consumption of these goods in the second half of 2009 (see Panel 3). The difference in the degree of sensitivity between both types of consumption (durable and non-durable) to changes in income becomes patent in the dynamic estimations of the respective elasticities in Panel 5. Whereas the income elasticity of real non-durable goods consumption has scarcely changed in the past decade, spending on durable goods has become notably more sensitive to fluctuations in household income during the crisis period. This latter effect, in turn, might reflect the tightening of lending standards applicable to households in recent years, insofar as the consumption of durable goods usually resides to a greater extent on the resort to this source of financing. Accordingly, diminished borrowing capacity would entail an increase in

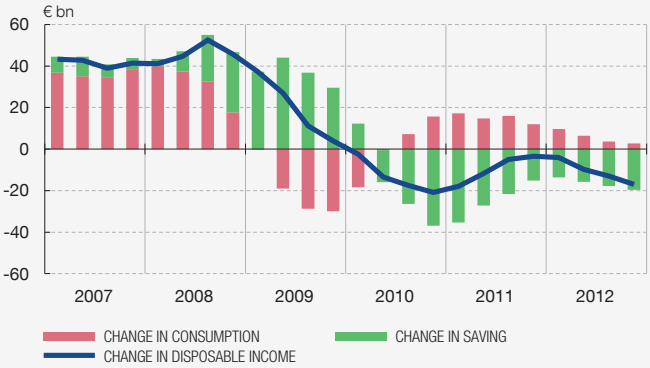
the proportion of spending on durable goods that has to be financed by households' own resources, which would mirror the greater sensitivity to income present in the data.

In short, it may be concluded from the foregoing analysis that the decline in the Spanish household saving rate in the past three years is partly due to weak income and to the dynamism of consumer prices, driven by tax increases and rises in certain regulated prices, in a setting in which the strong fall-off in the real consumption of durable goods has run in contrast to the marked stability of that of non-durable goods. Foreseeably, the weakness of incomes will continue to erode household resources and to diminish their saving capacity in the near future, while moderation in the pace of inflation, in the absence of further tax rises and against a background of relatively flat real consumption, should provide for the progressive stabilisation of the saving rate.

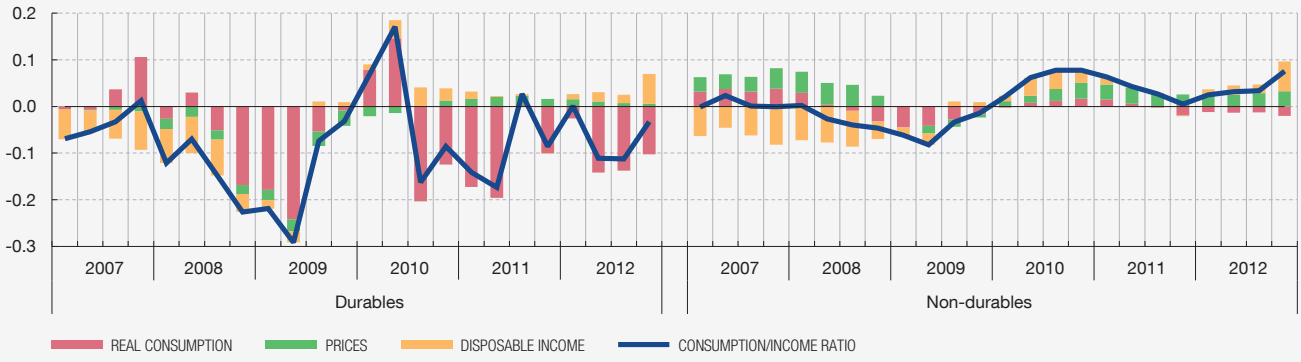
1 HOUSEHOLD SAVING RATE



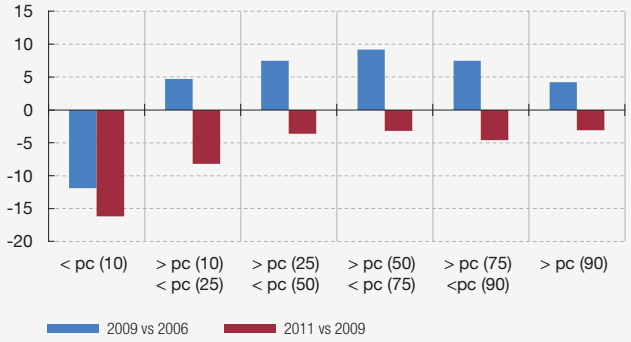
2 CHANGES IN SAVING



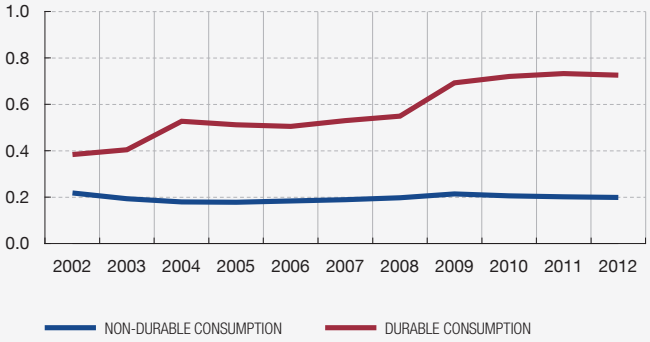
3 BREAKDOWN OF THE RATE OF CHANGE OF THE CONSUMPTION/INCOME RATIO INTO ITS COMPONENTS



4 CHANGE IN THE AVERAGE SAVING RATE PER PERCENTILE OF INCOME (a)



5 ELASTICITY OF CONSUMPTION TO INCOME (b)



SOURCES: INE and Banco de España.

a The blue (dark red) bars show the change in the average saving rate per percentile of income from 2006 to 2009 (from 2009 to 2011). Saving rates per household have been calculated using Household Expenditure Survey data.
Revenue and expenditure have been elevated to approximate National Accounts-analogous items and thus correct the under-reporting of revenue and expenditure in the Survey.
b See Gerlach and Bachetta (1997), "Consumption and credit constraints: international evidence", Journal of Monetary Economics.

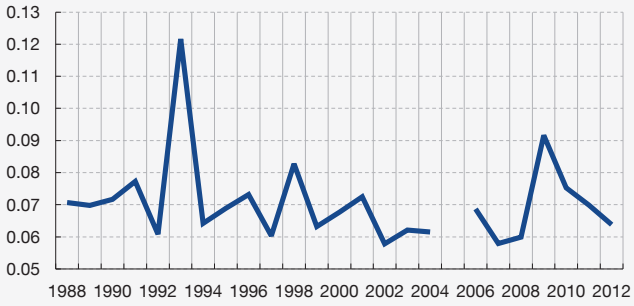
The crisis in Spain has been so intense that, since it broke out in 2008, around 7% of firms have closed[1] and employment has fallen by 20%. It is, however, important to determine whether these adverse effects at aggregate level have been across-the-board or, on the contrary, have been concentrated in certain sectors and/or firms and, in particular, whether a certain reallocation of economic resources to firms or sectors with higher productivity or potential future growth is under way. This Box analyses to what extent the crisis is giving rise to a reallocation of productive factors and attempts to characterise the sectors exhibiting a better relative performance since the crisis began. To do this, use was made of the financial and economic information available in the Banco de España's Central Balance Sheet Data Office on non-financial corporations and of the Instituto Nacional de Estadística's Central Companies Directory (DIRCE), with information to 2011, as well as information from the Spanish Labour Force Survey, available up to 2012, in its sectoral breakdown.

Broadly, it can be said that the impact of the crisis is relatively uneven across economic sectors. The construction sector, for example, has lost 25% of its number of firms and 60% of its jobs since 2008, while some non-market services sectors and the energy and recycling sector have seen net job creation and positive employment behaviour since the onset of the crisis. This unevenness in the behaviour of the various economic sectors is the result of a reallocation of productive factors across sectors. To approximate the rate at which this reallocation is occurring, various measures are used. First, an indicator is constructed to gauge the dispersion of the rates of change of employment across economic sectors. Chart 1 shows the behaviour of the weighted standard deviation of the rates of change of employment across sectors at

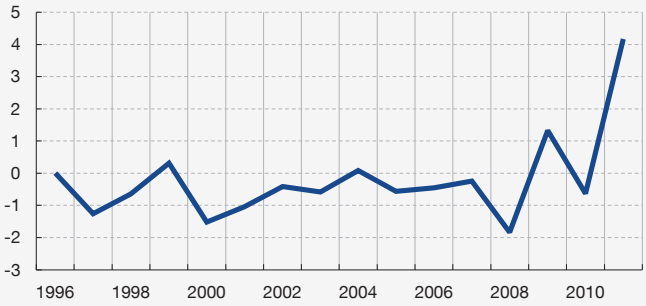
1 Taking into account both creation and destruction of firms in the period. The INE time series of firm demographics starts in 1995, so it contains no information on the destruction of firms in the early-1990's crisis for comparison with that of the current crisis. During the economic deceleration at the beginning of the 2000s, the stock of firms grew by around 10% with respect to the stock of firms in 1999.

DEGREE OF REALLOCATION OF PRODUCTIVE FACTORS BETWEEN SECTORS

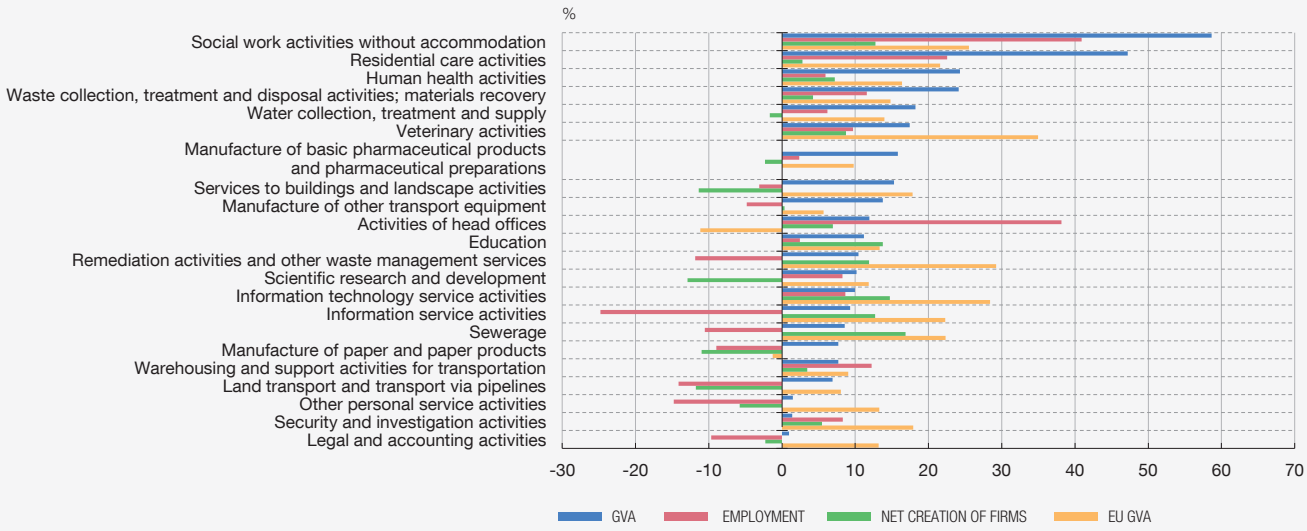
1 WEIGHTED STANDARD DEVIATION OF THE CHANGE IN SECTORAL EMPLOYMENT



2 FOSTER DECOMPOSITION FACTOR



3 CUMULATIVE RATE OF CHANGE FROM 2008 TO 2011



SOURCES: INE and Banco de España.

the two-digit level of disaggregation.[2] It can be seen that this dispersion remained relatively constant in the cyclical upturns, while it increased in the crisis periods, both that of 1993 and that since 2008. It should be noted, however, that according to this measure, the level of sectoral reallocation of employment was higher in the early-1990s crisis.

In a second approximation, an accounting decomposition of the observed productivity growth is carried out to determine the contribution of the transfer of resources to more productive sectors.[3] In other words, this measure reflects whether the higher-productivity sectors are the ones gaining weight in the economy, which, from an economic standpoint, entails an efficient reallocation of resources. As Chart 2 shows, an index of this measure calculated using the data of the Central Balance Sheet Data Office shows a very stable level throughout the whole expansionary cycle of the Spanish economy, which is consistent with the scant vigour of productivity observed in that period. However, the value of this index increases in 2009 and, above all, in 2011, which may be the first sign of a more efficient reallocation of resources in the crisis.[4]

In addition, to determine which sectors have shown the best relative performance since the crisis began, Chart 3 plots the growth rates between 2008 and 2011 of cumulative gross value added (GVA) in nominal terms and of employment, as well as the net creation of firms for the sub-set of sectors in which value added increased in 2011 with respect to 2008.[5]

In this chart a small group of sectors can be discerned whose activity indicators performed positively. Most of them belong to the services sector, including both non-market services (education, health care and social services) and some market services (business services, consulting, IT services and transport, among others), while in manufacturing the only sub-sectors belonging to this category are the manufacture of other transport equipment and the manufacture of basic pharmaceutical products and pharmaceutical preparations. Comparison with European countries shows that the economic sectors which have performed best in Spain have generally performed equally well in a sub-sample of euro area countries in the period analysed.[6] This high correlation would suggest that, at least partially, the movements between economic sectors in Spain and the rest of Europe are being driven by common trends.

Overall, the various results reported show that, although the crisis initiated in 2008 is having extremely negative effects on the number of firms and employment at aggregate level, there is a certain sectoral heterogeneity which reveals that some sectors, services in particular, are performing more favourable in terms of activity, employment and net creation of firms. Simultaneously, there is evidence of a certain sectoral reallocation of productive factors to sectors with higher productivity, which, if it continues and extends to a larger number of activities, might give rise to higher growth of aggregate productivity in the future.

2 Weighted by the share of each sector in total employment. The disaggregation corresponds to the two-digit level of the CNAE-93 between 1987 and 2008 and of the CNAE-2009 thereafter. The unweighted standard deviation gives similar results.

3 That component of the accounting decomposition of productivity growth is called "between term" and in this context has been calculated as the covariance between the increase in the weight of a certain sector, measured in terms of real value added, and its relative productivity. For more information, see Haltiwanger, Krizan and Foster (1998), *Aggregate Productivity Growth: Lessons From Microeconomic Evidence*, Working Papers 98-12, Center for Economic Studies, US Census Bureau.

4 This 2011 figure should be regarded with some caution because the year is not yet closed. In particular, it should be taken into account that the information for 2001 was based on 180,000 firms, compared with more than 300,000 for 2010.

5 These sectors are the two-digit disaggregation of the CNAE-2009. Financial and insurance activities have been excluded.

6 This sub-sample includes Germany, France, Italy and Portugal in the case of GVA, and France, Italy and Portugal in the case of employment. The information source is the BACH database.

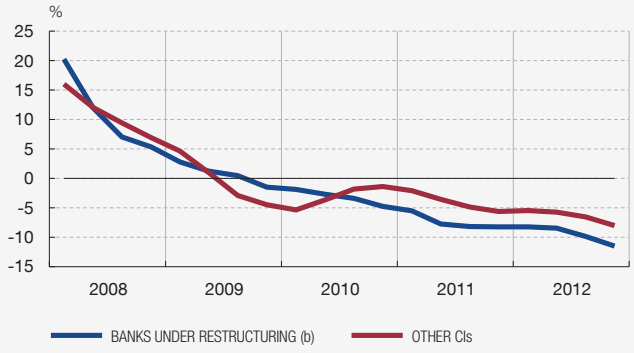
Recent developments in lending to non-financial corporations suggest that institutions in a situation of greater weakness have stricter lending policies.[1] In addition, the approval of the adjustment plans of institutions that have received public funds from the FROB obliges them to reduce their volume of lending further over the next five years. This raises the question of the extent to which firms that were, at the start of the financial crisis, obtaining funding from such banks are being adversely affected as a result and how far they are able to replace the financing they no longer receive from these institutions with funds obtained from other, more solid institutions.

To answer these questions, this box uses Central Credit Register (CIR) data to analyse developments in the lending of different institutions to non-financial corporations, distinguishing between banks in a weaker situation (hereinafter "banks under restructuring")[2] and

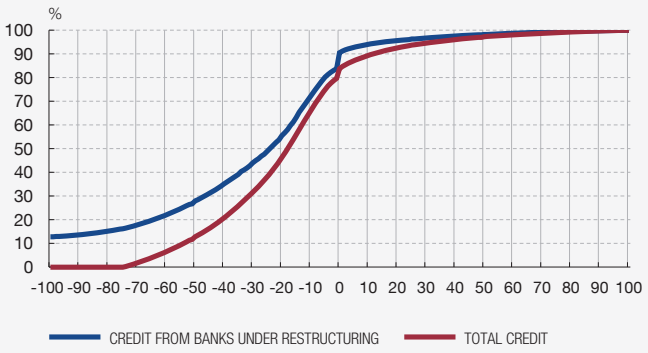
1 See the article "Un análisis de las diferencias entre entidades en la evolución del crédito al sector privado durante la crisis", in the March 2013 issue of the *Economic Bulletin* of the Banco de España.

2 These are considered to be those taken over or controlled by the FROB at some time during the period of recent years up to end-2012. Specifically, they are the following: Banco CAM (taken over in July 2011 and subsequently sold to B. Sabadell, which absorbed it in December 2012), Catalunya Banc, NCG Banco, Unimm Banc and Banco Gallego (majority-controlled by the FROB since September 2011, as a result of capital injections made by the latter; Banco Gallego is indirectly controlled, as it is a subsidiary of NCG Banco; Unimm Banc was subsequently sold to BBVA but had still not been absorbed by the latter as at the end of 2012), Banco de Valencia (taken over in November 2011 and sold to Caixabank in February 2013) and the BFA group (controlled by the FROB since May 2012).

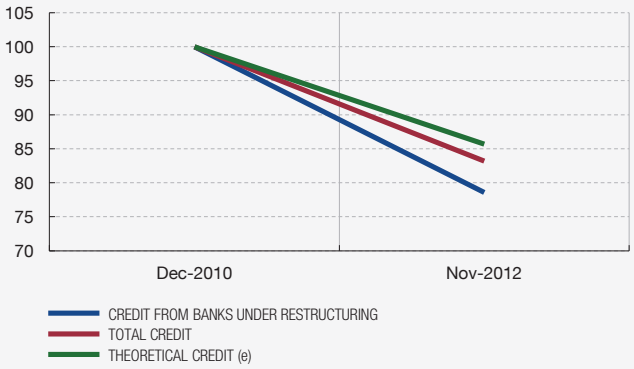
1 LENDING TO NON-FINANCIAL CORPORATIONS (a)
Year-on-year growth rate (%)



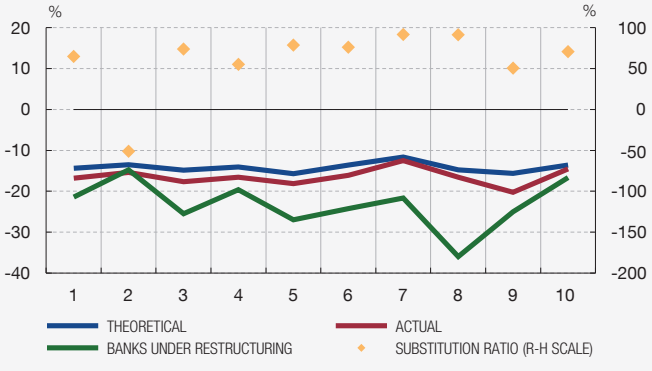
2 DISTRIBUTION OF THE CHANGE IN LENDING TO NON-FINANCIAL CORPORATIONS DEPENDENT ON BANKS UNDER RESTRUCTURING BETWEEN DECEMBER 2010 AND NOVEMBER 2012 (c)



3 EVOLUTION OF BANK LENDING TO FIRMS DEPENDENT ON BANKS UNDER RESTRUCTURING (d)



4 EVOLUTION OF BANK LENDING BETWEEN DECEMBER 2010 AND NOVEMBER 2012 BY SUB-GROUPS (f)



SOURCE: Banco de España.

a The 2012 data correspond to November.
b Banco CAM, Catalunya Banc, NCG Banco, Unimm Banc, Banco Gallego, Banco Valencia and BFA Group.
c Percentage of firms with a percentage change in credit that is less than or equal to the value shown on the x-axis.
d The evolution between December 2010 and November 2012 reflects, in each case, the median growth of the firms analysed.
e Estimated evolution of credit for an equivalent firm (in terms of sector, size, age, bad debts, indebtedness, profitability, sales growth and employment) not dependent on financing from taken-over banks.
f Categories: 1: Total; 2: Construction and real estate services; 3: Other sectors; 4: Microfirms; 5: Small firms; 6: Medium-sized firms; 7: Large firms; 8: Firms <=20% of whose credit is from taken-over banks; 9: Firms >20% and <=80% of whose credit is from taken-over banks; 10: Firms >80% of whose credit is from taken-over banks.

other institutions. Panel 1 shows how the former have indeed been cutting their financing to non-financial corporations more sharply over the last two and a half years than other institutions. Between December 2010 and November 2012,[3] the fall recorded by these institutions was 18%, as against 12% in the case of other institutions. In this case, moreover, the evolution of loans did not follow the cyclical pattern of those granted by the rest of the system in 2009 and 2010, which was more in line with the specific dynamics of the economy. This would suggest that their fund granting policy was more influenced by other types of factors, less linked to the business cycle.

Nonetheless, to assess the extent to which this has entailed a constraint for "dependent firms" (defined as those that in December 2010 had funds lent by banks under restructuring) it is necessary to take into account the possible effects of substitution between institutions. Panel 2 shows, for dependent firms, the distribution of the change between the two dates mentioned, of total bank credit received and of that granted by the banks under restructuring only.[4] The difference observed reflects the fact that some of these firms have replaced all or part of the funds granted by the latter banks with loans from other institutions.

However, a certain degree of substitution is normal in a market in which banks compete among themselves to attract customers. The question is whether this process has occurred fluidly, so that firms dependent on banks that have cut their supply of credit most have not faced a greater constraint than those that received financing from more solid institutions. To analyse this an equation is estimated relating the change in total credit received by non-financial firms, between December 2010 and November 2012, to its main determinants (size of the company, date of incorporation, sector, and indicators of its financial situation, including the level of its indebtedness, profitability, sales growth, employment and bad debts in 2010).[5] The inclusion in this regression of a dummy variable, which takes the value of 1 for dependent firms enables us to determine the extent to which such firms have recorded credit behaviour significantly different from that of the rest. With all the necessary caveats,[6] the results show that these firms recorded 2.5% lower growth in their total bank lending than equivalent firms that were not financed by banks under restructuring. This would seem to imply that the substitution has not been perfect and, therefore this evidence suggests that the existence of distressed banks has adverse implications for the real economy.[7]

To illustrate the quantitative relevance of shifts between institutions, Panel 3 shows three measures of the (median) decline in credit at dependent firms: the decline in credit from banks under restructuring; the decline in total funds received; and the decline that these firms would have had, according to the estimated equation, if they had not depended on these banks (theoretical credit). Comparison of the first two measures indicates that there has actually been a certain degree of substitution of lending institutions by the companies. Comparison of the latter two measures (total credit and theoretical credit) indicates that this substitution was not complete, although it was substantial. The aggregate substitution ratio, defined as the ratio between, on one hand, the median fall in total credit less that in credit from banks under restructuring (which measures the substituted part) and, on the other hand, the fall in theoretical credit less that in credit from these banks (which measures the need for substitution), has a value of 65%. It should be taken into account that this measure reflects shifts arising from both changes in the lending policy of the usual lender and from autonomous decisions that may have been taken by the firm itself.

Panel 4 shows these three measures of decline in credit and the substitution ratio again, for different groupings of firms. The degree of substitution is higher in sectors other than construction and real-estate services (category 3), for large companies (category 7) and for companies less than 20% of whose total credit came from banks under restructuring (category 8).[8] This is consistent with the fact that, either because they are large, or because they already had significant operations with other banks or belong to a sector less affected by the crisis than construction and real-estate services, these firms posed fewer information asymmetry problems for banks. In any case, in all the groupings considered there is a positive difference between the fall in total financing obtained by dependent firms and the decline that would have occurred, according to the estimated model, given their characteristics and economic situation. That is to say, in all cases the substitution is only partial and there is a negative effect arising from dependence on institutions under restructuring, which varies from 0.8 percentage points (pp), for the largest firms (category 7), to 4.6 pp for firms 20-80% of whose initial credit was from such institutions.

3 The November 2012 data are used instead of the December data to avoid the analysis being affected by the transfer of loans of Group 1 institutions to the SAREB, which took place in December 2012.

4 The definition of credit used in this box includes both drawn-down and undrawn balances, and both those maintained on the balance sheet and those written off, in line with the analysis of the article mentioned above in Footnote 1. This variable is considered a better measure of the change in the supply of funds to firms.

5 For this exercise, the CIR data are matched with the integrated data of the Central Balance Sheet Data Office of the Banco de España, which include the data obtained from its annual survey (CBA) and from the mercantile registries. The final sample analysed comprises 285,000 firms, of which around 68,000 had credit from taken-over banks in December 2010.

6 Despite the attempt to control for all possible relevant factors, the fit of the regression is poor and although the coefficients of the explanatory variables are statistically significant and have the expected signs, it is not possible to rule out entirely that part of the difference attributed to the dependence on banks under pressure is actually a result of other determinants that were not included.

7 This would be in line with the results of Jiménez et al (2012): "Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications", *American Economic Review*, 102(5): 2301-2326.

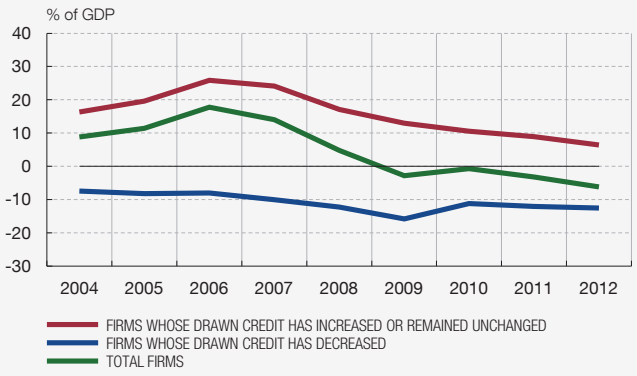
8 In the construction and real-estate sectors (category 2), the ratio is actually negative, since total lending was reduced by slightly more than that granted by banks under restructuring (15.4% as against 14.8%).

In short, the evidence presented in this box suggests that, in general, Spanish firms dependent on institutions under restructuring would have been able to replace, to a significant degree, the funds that they no longer received from their usual lenders with financing from other, more solid institutions. However, the scope of this substitution process depends on the characteristics of the firms, so that the existence of distressed institutions has certain constraining effects in the short term on the access of non-financial corporations to bank credit, although in the medium term the restructuring of such institutions will facilitate the normalisation of financing in the economy.

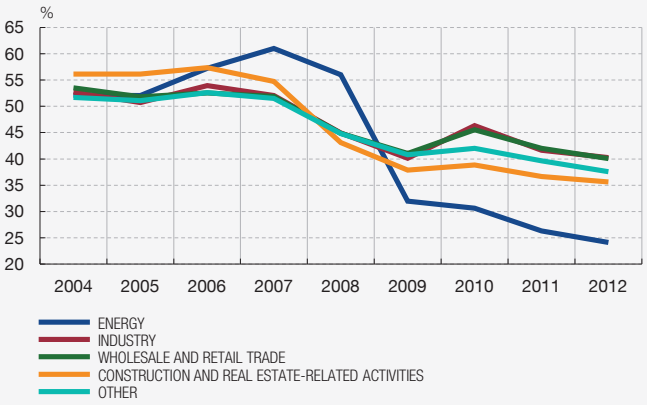
CORPORATE LENDING BY BANKS SINCE THE ONSET OF THE FINANCIAL CRISIS. A DISAGGREGATED ANALYSIS

The financial accounts of the Spanish economy reflect a slow and progressive decline in the debt of non-financial corporations over the last few years. According to this information, there was a cumulative fall of 12.1% in this sector's debt from its 2009 peak to end-2012. This is explained mainly by the behaviour of bank credit, which is the main form of financing available to firms, especially smaller ones.

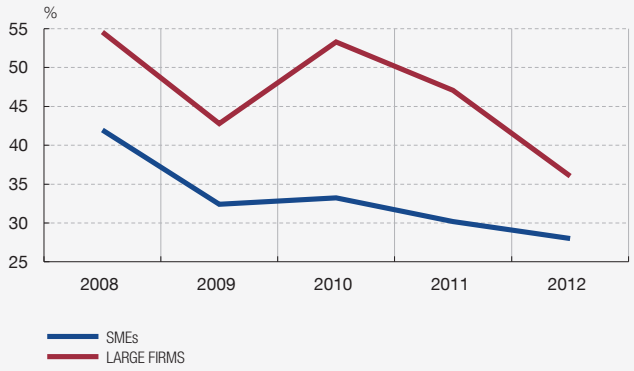
1 GROWTH OF DRAWN CREDIT: FLOW AS PERCENTAGE OF GDP (a)



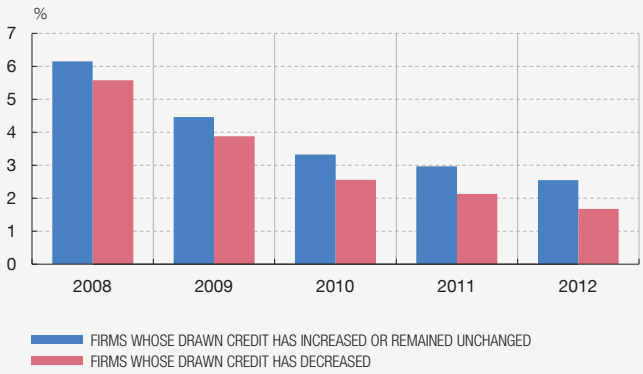
2 PERCENTAGE OF FIRMS WHOSE DRAWN CREDIT HAS INCREASED OR REMAINED UNCHANGED. SECTORAL BREAKDOWN (a)



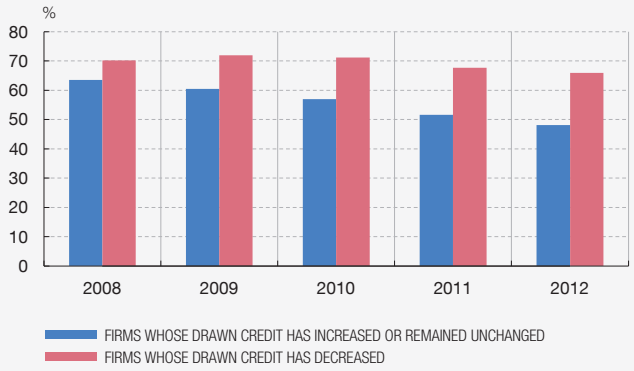
3 PERCENTAGE OF FIRMS WHOSE DRAWN CREDIT HAS INCREASED OR REMAINED UNCHANGED. BREAKDOWN BY SIZE (b) (c)



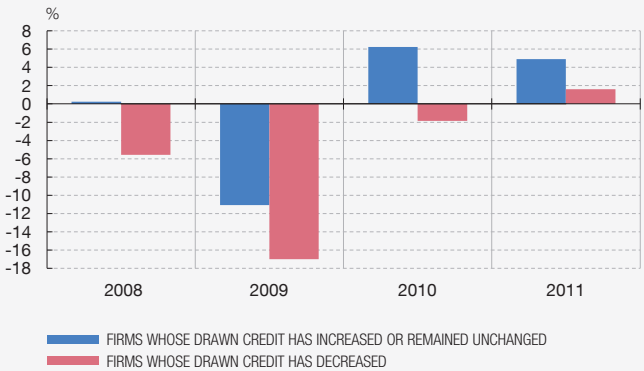
4 AVERAGE RETURN ON ASSETS IN t–1 (b) (d)



5 AVERAGE DEBT RATIO IN t–1 (b) (e)



6 YEAR-ON-YEAR GROWTH RATE OF SALES (b)



SOURCE: Banco de España.

a Calculations made using information from the Central Credit Register.
b Calculations based on a combination of information from the Central Credit Register and the Central Balance Sheet Data Office. Firms with fixed-income issues are excluded.
c Average of the percentages for each sector.
d Return on assets, defined as (ordinary net profit + financial costs) / net assets.
e Debt ratio, defined as interest-bearing borrowing / net assets.

This Box analyses that process of deleveraging from a microeconomic standpoint to see whether it has been uniform across firms.

Chart 1, which is based on Central Credit Register (CCR) data on drawn credit, reveals that the contraction since 2009 has been compatible every year with a considerable positive flow of financing in some firms.[1] The increase in credit recorded for the firms in this situation, in an adverse economic setting characterised by tight financing conditions, has naturally been smaller than in the more expansionary years, although it has held at notable levels, close to 9% of the GDP of those years.

Analysis of this phenomenon in terms of the number of firms shows that since the crisis broke out in 2008 the percentage of firms which raised (or did not change) their bank financing has fallen each year, despite which it remained at a notable level – around 40% – for nearly all economic sectors (see Chart 2). There were, however, some sectors in which the decrease was sharper, such as construction and real estate activities which were harder hit by the crisis, and energy, where the percentage dropped rapidly to stand at 25% in 2012. The decrease in the energy sector is explained by the deleveraging of some of the main energy groups in recent years[2] and by the significant reduction of renewable energy projects from 2008 after the sharp expansion of previous years.

Chart 3, prepared by combining information from the CCR and from the Integrated Central Balance Sheet Data Office survey (CBI),[3] shows how, in the most recent period, despite the recessionary economic situation, the bank debt of a significant percentage of firms has continued to grow, both in the small firms segment and among the largest firms. However, small firms, harder hit by the economic crisis and faced with tighter financing conditions, have shown lower percentages throughout the period.

In the other charts (Charts 4, 5 and 6), the firms in which bank credit remained steady or increased are compared with those at which it decreased. To carry out this economic and financial comparison, three significant variables in this area were selected: return on assets, debt and sales.[4] It can be deduced from these charts that the firms whose bank financing moved upwards were, on average, more profitable, had lower debt and enjoyed more buoyant sales. Moreover, in the case of the debt ratio, the gap between the average levels of the two groups has widened significantly. Thus, while in 2008 the difference was scarcely 7 pp, in 2012 the firms with a zero or positive change in credit had average debt of 48.1%, nearly 18 pp lower than that of those whose debt decreased (66%).

The results of this Box show that the recent behaviour of financial debt in the business sector has been extremely uneven. Although in aggregate terms the last few years have been dominated by deleveraging processes, the percentage of firms whose bank financing has increased in this period has not been negligible. This phenomenon was apparent in most productive sectors, both in small firms and in large ones. The firms whose borrowing grew are characterised, on average, by a healthier financial position, higher profitability and more buoyant activity. These developments thus suggest that available resources are gradually being reallocated to the firms and sectors in a comparatively better economic and financial situation. This reduces the risk of the sector as a whole.

1 All analyses have been made using CCR information on drawn credit. The main conclusions do not change if total undrawn credit is used.

2 For more details, see the box on this matter in the article "Results of non-financial corporations to 2012 Q4 and summary year-end data", published in the March 2013 Economic Bulletin.

3 The CBI is a sample obtained by combining the Central Balance Sheet Data Office annual survey and the CBB database (based on Mercantile Register information). Firms with fixed-income securities issues were excluded from the analysis (between 50 and 80 firms, depending on the year), since bank credit is not the only source of financing for these firms.

4 The return on assets and debt figures are shown up to 2012, since they refer to the previous period. As regards sales, the 2012 rate of change is not given because the 2012 sales figure is not yet available.